

REPLACEMENT SHEET
U.S. SER. NO. 10/621,541

ABSTRACT

A color polymer dispersed liquid crystal display includes a lower substrate, an upper substrate, color liquid crystal-polymer films, and two transparent liquid crystal driving electrodes, among others. The color liquid crystal-polymer films are formed by foaming polymer films mixed with red, green and blue pigments to form porous films of red, green, and blue colors and then dropping and injecting liquid crystals into droplets of the porous films under vacuum condition. One of the two transparent liquid crystal driving electrodes is disposed between the lower substrate and the PDLC films, and the other is disposed between the PDLC films and the upper substrate. The changes in properties of the PDLC films, which may be caused by unstable phase separation in a conventional phase separation process, are reduced, and the colors are improved.

MARKED-UP SHEET
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ABSTRACT

~~Disclosed is a~~ color polymer dispersed liquid crystal display comprising: includes a lower substrate₁; an upper substrate₂ formed on the lower substrate with a predetermined space therebetween; color liquid crystal-polymer films, and two transparent liquid crystal driving electrodes, among others. The color liquid crystal-polymer films are formed by foaming polymer films mixed respectively with red, green and blue pigments to form porous films of red, green, and blue colors and then dropping and injecting a liquid crystals into droplets of the porous films under vacuum condition, ~~and~~ One of the two transparent liquid crystal driving electrodes₃ is disposed between the lower substrate and the PDLC films₁ and the other is disposed between the PDLC films and the upper substrate. ~~Also disclosed is a method for manufacturing a color polymer dispersed liquid crystal display, comprising the steps of: forming pixel electrodes on a lower substrate; forming polymer films mixed respectively with red, green and blue pigments on the lower substrate including the pixel electrodes; forming porous films of red, green and blue colors by foaming the polymer films; forming color liquid crystal polymer films by dropping and injecting a liquid crystal into droplets of the porous films under vacuum condition; and combining an upper substrate having a common electrode on the inside surface thereof with the lower substrate including the color liquid crystal polymer films.~~ Since the present invention prepares the liquid crystal polymer films by foaming polymer films mixed with red, green and blue pigments to form porous films and then dropping and injecting a liquid crystal into the porous films under vacuum condition, it is possible to reduce ~~the~~ The changes in properties of the PDLC films₁ which may be caused by unstable phase separation in a conventional phase separation process, are reduced, and the colors are improved. In addition, the present invention using pigments can produce further improved colors.